

**ABSTRACT**

A system and method collects radio frequency isolation values with the assistance of mobile stations operating within a cellular wireless communication system. A broadcast channel and a broadcast cell/sector are first chosen. Then, the broadcast channel is disabled in neighboring (or all) other cells/sectors in the system. The base station servicing the broadcast cell/sector then transmits on the broadcast cell sector. Mobile stations operating within the system are then directed to measure and report the signal strength of the broadcast channel as well as a traffic channel servicing their ongoing calls. The mobile stations then report these signal strengths to the cellular wireless communication system. The signal strength measurements are then used to calculate cell/sector radio frequency isolation values between the broadcast cell/sector and respective servicing cell/sectors. Because the broadcast channel may be transmitted at a greater level than normal transmissions, a normalization process may be required. This process is then repeated for each cell/sector in the system so that cell/sector radio frequency isolation values may be collected for these other cells/sectors. Finally, all collected cell/sector isolation values are processed and compiled to create an isolation matrix.